

Non-Destructive Testing (NDT) Software - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2024 - 2029)

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Abstracts

The Non-Destructive Testing Software Market size is estimated at USD 0.63 billion in 2024, and is expected to reach USD 1.07 billion by 2029, growing at a CAGR of 11.10% during the forecast period (2024-2029).

Key Highlights

NDT software plays a crucial role in testing, offering numerous advantages that streamline testing procedures, improve accuracy, and enhance overall efficiency. One of the primary advantages of the NDT software is its ability to automate and standardize testing procedures. By utilizing advanced algorithms and data analysis techniques, NDT software can perform complex inspections with precision and consistency. This automation reduces the potential for human error and ensures that testing procedures adhere to established standards and specifications. Additionally, the standardization of testing procedures enables seamless integration with quality control systems, ensuring compliance with industry regulations and standards.

NDT software facilitates real-time collection and analysis, allowing immediate feedback and decision-making. This capability is especially valuable in industries where time-sensitive inspections are critical, such as aerospace and manufacturing. Real-time data analysis enables technicians to identify defects or anomalies promptly, leading to timely interventions and preventing potential safety hazards or production delays.

The use of NDT software also contributes to enhanced data management and documentation. NDT software enables the organization to retrieve inspection data, historical records, and testing reports through digital record-keeping and cloud-based

storage. This streamlines the documentation process and provides a comprehensive audit trail for regulatory compliance and quality assurance purposes. Additionally, generating detailed and customizable inspection reports enhances communication and transparency within the organization and with external stakeholders.

Moreover, NDT software supports the integration of advanced imaging and analysis techniques, such as computed tomography (CT) scanning and digital radiography. These techniques provide detailed 3D visualization and analysis of internal structures and defects, offering efficient insights into material integrity and quality. By harnessing these advanced imaging capabilities, NST software empowers technicians to detect subtle defects that may be undetectable through traditional testing methods, thereby improving overall inspection accuracy and reliability.

A notable impact of the global outbreak of COVID-19 was observed in the market as governments across multiple countries took various containment measures. Measures like implementing lockdowns significantly impacted the supply chain of industries like semiconductors, electronics, automotive, etc. As a result, a slowdown was witnessed in the market studied, especially during the initial phase.

However, with several governments worldwide recognizing the importance of the semiconductor industry and its role in economic recovery and incentivizing local sourcing and support, the industry is anticipated to recover during the forecast period.

Non-Destructive Testing (NDT) Software Market Trends

Oil and Gas Sector to Witness Major Growth

The oil and gas industry operates in three sectors: upstream, midstream, and downstream. The upstream sector is responsible for exploration and production activities that involve working in onshore and offshore rigs.

CUI testing in the upstream industry mainly happens in offshore establishments. Most of the functional oil rigs in the world are offshore. This creates a massive demand for NDT software to confirm CUI.

NDT in the oil and gas industry is critical for equipment integrity and the safety of petroleum refining and extraction operations. Safely containing potentially hazardous chemicals and fluids within pipes and pressure vessels requires careful inspection of

welds and metals for flaws and corrosion using ultrasonic and eddy current NDT testing solutions.

In the oil and gas industry, the NDT software plays an essential role in flaw detection, material characterization, integrity assessment, and safety assurance. For instance, according to OPEC, the global demand for crude oil is expected to be aimed toward light products, such as gasoline and ethane. In 2045, gasoline demand is forecasted to climb to 27.6 million barrels per day.

Asia-Pacific is Expected to Register the Fastest Growth

The Asia-Pacific region is expected to grow significantly in the non-destructive testing software market as all the major end-user industries of the market studied are witnessing rapid growth. The penetration of advanced manufacturing and product testing solutions is also growing as significant vendors operating in the market are expanding their global footprint. Quality and product safety are crucial for them to compete with international players.

The growing manufacturing end-user industries such as petrochemical, paper and pulp, oil and gas, automotive, aerospace, defense, and others are set to boost the market growth rate in the region. The growing demand for renewable energy in the region will add a lucrative growth advantage to the growth of the studied market.

Moreover, the region's growing automotive industry also supports the market growth during the projected timeline. According to the statistics published by the Japan Automobile Manufacturers Association in 2023, the total number of new car registrations in Japan reached about 3.99 million units, of which about 1.76 million were standard-size vehicles. The number of newly registered mini cars called kei cars and compact cars also increased compared to the previous year. Japan's total number of new motor vehicle registrations reached roughly 4.78 million units, with passenger vehicles representing the vast majority.

According to the Ministry of Land, Infrastructure, and Transport, electric vehicles (EVs) accounted for about 1.8% of South Korea's automobile market as of May 2023. In addition, the South Korean government has set a goal of increasing the share of electric and hydrogen vehicles in new car sales to 33 by 2030, further supporting the market growth.

Non-Destructive Testing (NDT) Software Industry Overview

The non-destructive testing (NDT) software market is fragmented and consists of some influential players like Yxlon International GmbH (Comet Holding AG), TWI Limited, Sonatest Ltd, Mistras Group, and Eddyfi Technologies. These players have a noticeable market share and are concentrating on expanding their customer base across foreign countries. These businesses leverage strategic collaborative actions to improve their market percentage and enhance profitability.

August 2023: Baker Hughes announced the launch of Krautkr?mer RotoArray comPAct, a portable roller probe for manual phased array (PA) ultrasonic inspection of large-scale composite materials. The new technology complements the Krautkr?mer RotoArray product line for the aviation, space exploration, and wind energy industries. Krautkr?mer RotoArray comPAct is equipped with new Baker Hughes patented compact technology, enabling lighter, simpler, and more cost-effective ultrasound (UT) phased array applications.

May 2023: Previa, a business under the company's umbrella, made headlines with its acquisition of Sensor Networks Inc. (SNI). SNI specializes in sensing tools and technologies that enhance the inspection and remote monitoring of safety-critical components, boosting productivity. SNI joined the Previa Group following the acquisition, with its NDT solutions now bolstered by the Eddyfi Technologies business unit.

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